

应用

重大突发事件决策支持的语义协同模式构建的案例推理研究

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摘要:

重大突发事件能引发社会连锁响应和严重后果, 并可能危及社会稳定。因此当突发事件发生后, 能及时生成预案、开展行动, 将能最大程度上减少损失。本文将基于案例推理的案例表示与相似度度量方法应用到应急辅助决策中, 尝试通过3个方面构建合适的相似度度量建模表达, (1) 语义约束下的案例属性提取过程; (2) 基于多案例多属性的事物概念设计, 允许案例属性存在同语义不同表达; (3) 协同特征匹配下的案例新描述, 基于wordnet词汇关联分析多类中心的特征距离, 推理出案例属性的最可能对应语义。实验表明其可以显著提升案例匹配效率。将为今后重大突发事件的处理提供有效而及时的决策支持。

关键词: 案例推理; 语义距离; 协同模式; 重大突发事件; 决策支持

Case-Based Reasoning for Decision Support of Important Sporadic Event based on Semantic Synergetic Pattern

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Abstract:

Important sporadic events could lead to social chain response and serious consequences, which may endanger social stability. When an sporadic event occurs, the emergency preparedness should be generated in time to launch action, what will reduce losses in great extent. This paper researched on applying case expression and similarity measure methods to the emergency decision support based on Case-Based Reasoning, and proposed a new case retrieving method based on semantic distance synergetic mode. Three approaches are attempted to build the appropriate similarity measure: firstly, case features are extracted under semantic distance; then, case concepts are described under Multi-Case Multi-Label by various words with the same meaning; finally, similarity measure by wordnet, which would reason the most same semantic word. The experiments showed that the proposed method could significantly improve the case retrieving efficiency, which could provide effective and timely decision-making support for the future treatment of important sporadic events.

Keywords: Case Reasoning Semantic Distance Synergetic Pattern Important Sporadic Event Decision Support

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